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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/035,736	11/07/2001	Thomas W. Smith	D/A1442	5048

7590 08/26/2003

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100 Clinton Ave. S.  
Rochester, NY 14644

EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 08/26/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	Application No.	Applicant(s)	
	10/035,736	SMITH ET AL.	
	Examiner	Art Unit	
	Callie E. Shosho	1714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All   b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)                      4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_.
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)                      5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 11/7/01.                      6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

**Claim Rejections - 35 USC § 103**

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

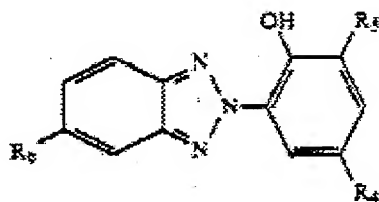
1. Determining the scope and contents of the prior art.
  2. Ascertaining the differences between the prior art and the claims at issue.
  3. Resolving the level of ordinary skill in the pertinent art.
  4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gundlach et al. (U.S. 6,054,505) in view of Vieira et al. (U.S. 5,096,781).

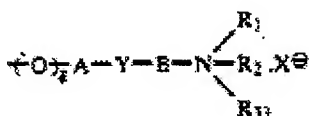
Gundlach et al. disclose ink comprising water, 0.1-40% nonpolymeric salt, 1-5% anionic dye, and 0.01-50% polyquaternary amine such as polydiallyl dimethyl ammonium, polyquaternized polyvinylamine, polyquaternized polyallylamine, epichlorohydrin/amine, cationic amido amine, and copolymer of vinyl pyrrolidone and vinyl imidazolium salt. In one embodiment, the anionic dye complexes with the polyquaternary amine. It is further disclosed that the above ink is preferably printed using thermal ink jet printer but Gundlach et al. also disclose the use of other conventionally known ink jet printing methods including piezoelectric ink jet process (col.1, lines 8-17 and 41-43 and 44-47, col.2, line 46-col.3, line 3, col.6, lines 62-65, col.7, lines 25-27 and 40-55, col.13, lines 15-17 and 31-32, col.15, lines 42-45, col.19, lines 51-58, col.22, lines 35-38, and col.23, lines 18-24).

The difference between Gundlach et al. and the present claimed invention is the requirement in the claims of quaternary ammonium substituted UV absorbing compound.

Vieira et al., which is drawn to ink jet inks, disclose the use of 0.01-20% light stabilizer of the formula:



which is identical to the quaternary ammonium substituted UV absorbing compound presently claimed when  $R^6$  is hydrogen,  $R^5$  is hydrogen,  $R^4$  is of the formula:



where  $g$  is 0,  $A$  is alkylene group,  $Y$  is direct bond or  $\text{C}(\text{O})\text{NR}^1$  where  $R^1$  is hydrogen,  $B$  is alkylene group, and  $R_1$ ,  $R_2$ , and  $R_{33}$  are each hydrogen, alkoxy group, alkyl group, or aryl group. The motivation for using such light stabilizer to impart lightfastness to the ink (col.1, lines 5-8, col.2, lines 11-15, 25-44, and 51-55, col.3, lines 9-10 and 57, col.4, lines 10, 24-34, and 41-45, col.5, lines 1-20, and col.17, lines 27-38 and 41-45).

In light of the motivation for using light stabilizer disclosed by Vieira et al. as described above, it therefore would have been obvious to one of ordinary skill in the art to use such light stabilizer in the ink of Gundlach et al. in order to produce ink with excellent lightfastness, and thereby arrive at the claimed invention.

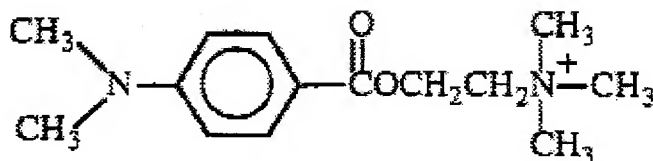
4. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gundlach et al. (U.S. 6,054,505) in view of WO 97/20000.

Gundlach et al. disclose ink comprising water, 0.1-40% nonpolymeric salt, 1-5% anionic dye, and 0.01-50% polyquaternary amine such as polydiallyl dimethyl ammonium, polyquaternized polyvinylamine, polyquaternized polyallylamine, epichlorohydrin/amine,

cationic amido amine, and copolymer of vinyl pyrrolidone and vinyl imidazolium salt. In one embodiment, the anionic dye complexes with the polyquaternary amine. It is further disclosed that the above ink is preferably printed using thermal ink jet printer but Gundlach et al. also disclose the use of other conventionally known ink jet printing methods including piezoelectric ink jet process (col.1, lines 8-17 and 41-43 and 44-47, col.2, line 46-col.3, line 3, col.6, lines 62-65, col.7, lines 25-27 and 40-55, col.13, lines 15-17 and 31-32, col.15, lines 42-45, col.19, lines 51-58, col.22, lines 35-38, and col.23, lines 18-24).

The difference between Gundlach et al. and the present claimed invention is the requirement in the claims of quaternary ammonium substituted UV absorbing compound.

WO 97/20000 discloses the use of 0.1-15% colorant stabilizer for ink jet inks wherein the stabilizer is of the formula:



which is identical to the quaternary ammonium substituted UV absorbing compound presently claimed, i.e. choline chloride ester of dimethylaminobenzoic acid. The motivation for using such stabilizer is to prevent fading of the ink when exposed to light including sunlight (page 1, lines 10-12, page 6, line 7-page 7, line 3, page 8, line 3, page 22, lines 29-31, page 25, lines 8-14, and example 38).

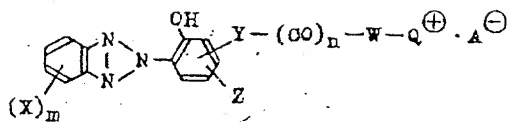
In light of the motivation for using stabilizer disclosed by WO 97/20000 as described above, it therefore would have been obvious to one of ordinary skill in the art to use such stabilizer in the ink of Gundlach et al. in order to produce ink which will not fade upon exposure to light, and thereby arrive at the claimed invention.

5. Claims 1-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Gundlach et al. (U.S. 6,054,505) in view of JP 50121178.

Gundlach et al. disclose ink comprising water, 0.1-40% nonpolymeric salt, 1-5% anionic dye, and 0.01-50% polyquaternary amine such as polydiallyl dimethyl ammonium, polyquaternized polyvinylamine, polyquaternized polyallylamine, epichlorohydrin/amine, cationic amido amine, and copolymer of vinyl pyrrolidone and vinyl imidazolium salt. In one embodiment, the anionic dye complexes with the polyquaternary amine. It is further disclosed that the above ink is preferably printed using thermal ink jet printer but Gundlach et al. also disclose the use of other conventionally known ink jet printing methods including piezoelectric ink jet process (col.1, lines 8-17 and 41-43 and 44-47, col.2, line 46-col.3, line 3, col.6, lines 62-65, col.7, lines 25-27 and 40-55, col.13, lines 15-17 and 31-32, col.15, lines 42-45, col.19, lines 51-58, col.22, lines 35-38, and col.23, lines 18-24).

The difference between Gundlach et al. and the present claimed invention is the requirement in the claims of quaternary ammonium substituted UV absorbing compound.

Pending translation, it is noted that JP 50121178 discloses UV light absorbing agent of the formula:



which is identical to the quaternary ammonium substituted UV absorbing compound presently claimed when  $n$  is 0,  $X$  is hydrogen,  $Z$  is hydrogen,  $Y$  is direct bond,  $W$  is alkylene group or  $\text{CH}_2\text{H}_4\text{CONHC}_2\text{H}_4$ , and  $Q$  is  $\text{N}(\text{CH}_3)_3$  or when  $n$  is 1,  $X$  is hydrogen,  $Z$  is hydrogen,  $Y$  is direct bond,  $W$  is  $\text{NHC}_3\text{H}_6$  and  $Q$  is  $\text{N}(\text{CH}_3)_3$ . The motivation for using such compound is to impart lightfastness (abstract, col.2, formula (I), and Tables).

In light of the motivation for using UV absorbing compound disclosed by JP 50121178 as described above, it therefore would have been obvious to one of ordinary skill in the art to use such compound in the ink of Gundlach et al. in order to produce ink with excellent lightfastness, and thereby arrive at the claimed invention.

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Gundlach et al. (U.S. 6,004,899) disclose ink comprising water, anionic dye, and polyquaternary amine compound, however, there is no disclosure of quaternary ammonium substituted UV absorbing compound as presently claimed.

EP 693483 discloses compound having UV absorbing properties that is similar, but not identical, to the quaternary ammonium substituted UV absorbing compound presently claimed.

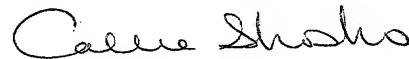


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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 703-305-0208. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 703-306-2777. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.



Callie E. Shosho  
Primary Examiner  
Art Unit 1714

CS  
8/23/03